

ARTICLES

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International Law and Domestic Legislation in the Sustainable Management of Transboundary Watercourses: The Case of the Amazon River Basin

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The Article explores the intersection between positive international law and domestic legislation in the protection and management of transboundary water resources, with particular focus on the Brazilian Amazon. The Amazon River Basin occupies the entire central and eastern parts of South America, covering approximately forty-four percent of the land area of the South American continent.¹ It extends across the borders of eight states: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela.² The Amazon—the world's longest, widest, and deepest river—runs for approximately 7000 km

¹ U.N. Environment Programme (U.N.E.P.), *Concept Document for the Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin* 4, (2005) available at http://iwlearn.net/iw-projects/Fsp_112799471058/project_doc/amazon-river-basin-project-concept-paper.pdf.

² *Amazon River Basin: Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin*, WATER PROJECT SERIES, NO. 8 (Org. of Am. States), Oct. 2005, at 1 [hereinafter *Amazon River Basin*], available at http://www.oas.org/dsd/events/english/documents/osde_8amazon.pdf.

from its source in Peru to the Atlantic Ocean.³ The volume of water it discharges, estimated at 210,000 meters per second (mps), exceeds the combined discharge of the world's nine next largest rivers.⁴ Covered by tropical rainforest, the Amazon Basin's surrounding ecosystems are characterized by great biodiversity.⁵ Generally recognized as an important source of natural resources for human economic development, the Amazon Basin is home to some of the world's largest known reserves of bauxite, iron, gold, tin, and timber.⁶ Development efforts in recent decades have led to significant changes in the region's environment.⁷ These environmental changes are expected to continue and increase in the coming years and decades, as there will be more roads and highways into the region's interior, greater demands in international markets for its agricultural and forest products, new waves of migration and settlement, further oil exploration and development, and the rapid growth of cities and towns in the region's interior.⁸ As a result, the current problems of deforestation, erosion, sedimentation, and water pollution can be expected to worsen, and the alteration of water, energy, carbon, and nutrient cycles resulting from changes in plant cover can be expected to produce local, regional, and global climatic and environmental consequences.⁹

Given the global importance of the Amazon Basin and the growing threats to its fragile ecosystem—which to date has been relatively unaffected by human settlement¹⁰—the need for a comprehensive legal regime to guide the development and management of this shared watercourse cannot be overstated. Because well over half of the Amazon Basin is in Brazil, much of the international spotlight on the exploitation of the Amazon's natural resources has focused on Brazil.¹¹ Of equal importance is Brazil's legal approach to protecting and sustainably managing this transboundary basin. The latter issue

³ U.N.E.P., *supra* note 1, at 4.

⁴ *Id.*

⁵ *Id.*

⁶ *Amazon River Basin*, *supra* note 2, at 2.

⁷ See U.N.E.P., *supra* note 1, at 6–7.

⁸ *Id.* at 7.

⁹ *Id.* at 8–9.

¹⁰ A high percentage of the estimated ten million people inhabiting the Amazon Basin belong to indigenous communities that have settled mainly along the banks of the river. *Id.* at 5.

¹¹ See, e.g., Ralph H. Espach, *The Brazilian Amazon in Strategic Perspective*, in ENVIRONMENT AND SECURITY IN THE AMAZON BASIN 1, 4–7 (Joseph S. Tulchin & Heather A. Golding eds., 2002).

raises the following question: With respect to the protection and management of the land and water resources of the Amazon Basin, what law should apply—Brazil's or international law? Will a regional framework of laws conceived by all the states that share the Amazon suffice, or must it only be positive international law?

As if he anticipated these questions, former Brazilian president José Sarney chose to frame his response in terms of the exercise of sovereignty when he declared decades ago that the Amazon is Brazilian because "it is situated in our territory."¹² This indicates that Brazil is entitled to exercise internal sovereignty on environmental policy with respect to the Amazon Basin.¹³ Assuming *arguendo* that this was the case, would such an assertion of sovereignty provoke a clash between positive international law and domestic legislation over the management of the natural resources of the Amazon Basin? This Article will attempt to address this question in two parts. It begins with an overview of the international legal regime governing the land and water resources of a transboundary river basin, touching briefly on the traditional doctrines that have been applied to this area and their progressive evolution into an autonomous body of law. Against this backdrop, the Article explores the status of international customs and general principles of law in the Brazilian legal system, and the normative position they occupy in relation to national law. With respect to customary rules of international law and general principles of law, Brazil adheres to the monist tradition, which takes as its point of departure the notion that international law and domestic law are parts of a single unitary legal system, and can therefore be automatically incorporated into the domestic legal order. In the event of conflict, and because monism accords supremacy to international

¹² Eugene Robinson, *Brazil Angrily Unveils Plans for the Amazon*, WASH. POST, Apr. 7, 1989, at A1 (internal quotation marks omitted).

¹³ Brazilian sovereignty over the Amazon rain forest has not gone unchallenged by some multilateral institutions such as the World Bank, by industrialized countries—notably the United States and Germany—and by nongovernmental organizations. Alexander López, *Environmental Change, Security, and Social Conflicts in the Brazilian Amazon*, 5 ENVTL. CHANGE & SECURITY PROJECT REP. 26, 26–32 (Summer 1999), available at <http://www.wilsoncenter.org/topics/pubs/feature3.pdf>; see also Robert Keohane, *Hobbes's Dilemma and Institutional Change in World Politics: Sovereignty in International Society*, in WHOSE WORLD ORDER 165, 165–86 (Hans-Henrik Holm & Georg Sørensen eds., 1995). The challenge to this raw assertion of sovereignty is twofold: first, on the ecological grounds that the importance of the Amazon extends far beyond the territory of Brazil; and second, on the doctrinal grounds that the traditional conception of sovereignty as rule over a fixed, static territory no longer applies when dealing with the territoriality of an ecosystem that slices across geopolitical boundaries. *Id.*

law over domestic legislation, it follows that the former will enjoy a higher prescriptive value than the latter. However, when a general principle of law or a rule of customary international law comes into conflict with the Brazilian Constitution, the Brazilian Constitution will prevail.

This Article also demonstrates that, *grosso modo*, Brazilian law complies with international customary norms and general principles of law relating to the protection and sustainable management of the land and water resources of a shared transboundary basin, and that concerning the protection and management of the environment, the Brazilian legislature has taken great pains to ensure that positive international law trumps domestic legislation in case of a conflict.

I

INTERNATIONAL ENVIRONMENTAL LAW

A. A Brief Overview of Transboundary Watercourse Law

A number of leading publicists have observed that “international environmental law is an extensive field involving hundreds of multilateral and bilateral treaties, spanning the full array of environmental concerns.”¹⁴ Our task here is to review that portion of international environmental law that applies to the exploitation of transboundary water resources—specifically, the rules for resolving the conflicting interests of states sharing an international drainage basin that have been widely agreed on by the international community. The law governing transboundary watercourses has evolved through both custom (i.e., state practice)¹⁵ and international treaties,¹⁶ and has been influenced along the way by other sources of law such as general principles of law, judicial decisions, and the resolutions and recommendations of international organizations.

¹⁴ LORI F. DAMROSCH, LOUIS HENKIN, SEAN D. MURPHY & HANS SMIT, *INTERNATIONAL LAW: CASES AND MATERIALS* 1489 (5th ed. 2009).

¹⁵ In this vein, mention should be made of the role the doctrines of western United States riparian law—especially the doctrine of prior appropriation—have played in the evolution of the principle theories of water law. See Carolin Spiegel, *International Water Law: The Contributions of Western United States Water Law to the United Nations Convention on the Law of the Non-Navigable Uses of International Watercourses*, 15 *DUKE J. COMP. & INT’L L.* 333, 335–40 (2005).

¹⁶ See Convention on the Law of Non-navigational Uses of International Watercourses, G.A. Res. 51/229, U.N. GAOR, 51st Sess., U.N. Doc. A/51/PV.99 (May 21, 1997).

1. Traditional Doctrines on Transboundary Watercourses

Four principle doctrines serve as the spring from which the classical rules and guidelines on transboundary water resource management flow.¹⁷ These are the doctrines of absolute territorial sovereignty, absolute territorial integrity, limited territorial sovereignty, and community resource.¹⁸ Each of these doctrines will be reviewed in this section.

a. The Harmon Doctrine of Absolute Territorial Sovereignty

Also known as the doctrine of absolute territorial sovereignty, the Harmon Doctrine holds that in the absence of a treaty between riparian states, an upstream state has exclusive and absolute sovereignty over the waters found within its territory.¹⁹ This celebrated doctrine grew out of a dispute between Mexico and the United States over the diversion of the Rio Grande for irrigation in the United States to the detriment of Mexican farmers.²⁰ Asked to submit an opinion on the legality of the American diversions, U.S. Attorney General Harmon opined that the “rules, principles and precedents of international law impose no duty or obligation upon the United States” and as a result the recognition of the Mexican claim would be “entirely inconsistent with the sovereignty of the United States over its national domain.”²¹ The Harmon Doctrine has been described as a “brutal assertion of the unfettered right of a territorial sovereign to do as it pleases.”²² However, the doctrine has been consistently modified by treaty, and there are more than two thousand bilateral and multilateral treaties²³

¹⁷ Spiegel, *supra* note 15, at 335.

¹⁸ *Id.*

¹⁹ Stephen C. McCaffrey, *The Harmon Doctrine One Hundred Years Later: Buried, Not Praised*, 36 NAT. RESOURCES J. 549, 549–52 (1996).

²⁰ *Id.* at 552–57.

²¹ See Treaty of Guadalupe Hidalgo—International Law, U.S.-Mex., Dec. 12, 1895, 21 Op. Att’y Gen. 274, 274.

²² CHARLES B. BOURNE, INTERNATIONAL WATER LAW: SELECTED WRITINGS OF PROFESSOR CHARLES B. BOURNE 110–12 (P. Wouters ed., 1997). This network of treaties also regulates navigation, hydroelectric power, irrigation, agriculture, drinking, and recreation among close to 300 transboundary watercourses around the world today, including such well known rivers as the Congo, Niger, Nile, Zambezi in Africa; the Ganges, Indus, and Mekong in Asia; the Columbia, St. Lawrence, Niagara, and Rio Grande in North America; the Amazon in South America; and the Danube, Oder, Rhine, and Volga in Europe. See BURNS H. WESTON, RICHARD A. FALK, HILARY CHARLESWORTH & ANDREW L. STRAUSS, INTERNATIONAL LAW AND WORLD ORDER: A PROBLEM-ORIENTED COURSEBOOK 1176 (4th ed. 2006); see also BOURNE, *supra*, at 110–12.

²³ WaterWiki.net states:

that regulate the use of transboundary waters in a manner that recognizes and protects the rights of downstream states.²⁴

b. The Doctrine of Absolute Territorial Integrity

Where the Harmon Doctrine vests absolute sovereignty over the resources of an international drainage basin in the upstream state, the doctrine of absolute territorial integrity reverses this order by vesting a state with territory in an international drainage basin with the right to have water flow into its territory from another state “undiminished in quantity and unimpaired in quality.”²⁵ Put differently, the doctrine denies upstream states the absolute and exclusive right to utilize the waters of the basin without first securing the consent of the downstream states.²⁶ Although the doctrine has been invoked by a few states, notably Pakistan in its dispute with India over the waters of the River

Among the earliest was the 1909 Boundary Waters Treaty concluded between the United States and Canada (Great Britain), which established an International Joint Commission: one of the most successful models of bilateral cooperation. Many bilateral treaties that established international boundaries also deal with the waters that are crossed or constitute an international boundary (one example is the 1973 agreement between Czechoslovakia and the USSR on the regime of state frontiers and cooperation in frontier questions). Some bilateral agreements may also have a ‘framework’ character that establishes certain general legal rights and obligations, and creates institutional mechanisms of cooperation for all ‘transboundary’ waters. Examples are the 1956 treaty between Hungary and Austria concerning the regulation of water economy questions in the frontier region, or the most recent agreement of May 24 2002 between Russia and Belarus on cooperation in the field of protection and rational use of transboundary water bodies. Finally, bilateral agreements are often concluded to regulate different activities on specific watercourses (such as the series of agreements between France and Switzerland concerning Lake Leman). They may also be related to the implementation of joint projects (such as the 1977 treaty between Hungary and Czechoslovakia concerning construction of a system of barrages and ship locks on the Danube). Thus, water treaties may be bilateral or multilateral; they may have a framework character governing all transboundary waters or deal with a specific international watercourse (IWC) or part of it; they may regulate a particular use, be project specific or be concerned with the watercourse protection and pollution control.

Water Conflict and Cooperation/Legal and Institutional Approaches, WATERWIKI.NET, http://waterwiki.net/index.php/Water_Conflict_and_Cooperation/Legal_and_Institutional_Approaches (last modified Oct. 17, 2009).

²⁴ See WESTON ET AL., *supra* note 22, at 1168.

²⁵ *Doremus v. Mayor of City of Paterson*, 55 A. 304, 304–05 (1903). The riparian rights and reasonable use doctrines evolved from the natural flow doctrine. See Spiegel, *supra* note 15, at 335–36.

²⁶ McCaffrey, *supra* note 19, at 551.

Indus and the United States in the controversy surrounding Canada's development of the Columbia River,²⁷ it has received little support from publicists or in state practice.²⁸ As Professor Eckstein points out:

[N]o contemporary authority espouses the postulate as a modern principle of international law. It is regarded as inequitable in its allocation of water resources, as well as in its biased preference for downstream states, particularly because it does not require lower riparian states to compensate upstream states for preserving the waters.²⁹

By effectively prohibiting all watercourse development, the doctrine of absolute territorial integrity places a burden on the upper riparian state without placing an equivalent duty on the lower riparian state—virtually guaranteeing that no developed or developing nation would accept such a rule.³⁰

c. The Doctrine of Limited Territorial Sovereignty and Integrity

The doctrine of limited territorial sovereignty and integrity is an amalgam of the first two doctrines.³¹ It rejects the absolutist principles embodied in both doctrines and adopts a middle position, allowing the state to retain rights of territoriality and sovereignty, although on a diminished scale.³² To accomplish this objective, the doctrine embraces the “first in time, first in right” principle that favors the right of the prior user.³³ The state that first establishes a utilization of a transboundary water resource thereby acquires a good title to it.³⁴ Two problems plague this doctrine. The first is that the doctrine rewards the first user to the detriment of the later user, so if for instance “the first user is a developed country and the later user is a less developed country, then the less developed country cannot use

²⁷ BOURNE, *supra* note 22, at 111.

²⁸ Alan Boyle, *Central Asian Water Problems*, in OIL, TRANSITION AND SECURITY IN CENTRAL ASIA 203, 205 (Sally N. Cummings ed., 2004).

²⁹ Gabriel Eckstein, *Application of International Water Law to Transboundary Groundwater Resources, and the Slovak-Hungarian Dispute over Gabčíkovo-Nagymaros*, 19 SUFFOLK TRANSNAT'L L. REV. 67, 74–75 (1995–1996) (citations omitted).

³⁰ Shashank Upadhye, *The International Watercourse: An Exploitable Resource for the Developing Nation Under International Law*, 8 CARDOZO J. INT'L & COMP. L. 61, 70 (2000).

³¹ *Id.*

³² *Id.* at 70–71.

³³ *See id.* at 71.

³⁴ *Id.*

the watercourse to further develop.”³⁵ The less developed country is effectively foreclosed from doing so by the prior use doctrine. Secondly, the doctrine also fails “to consider whether the first user conducted a thorough plan for water allocation or pollution control.”³⁶

d. Community Resource/Interests Doctrine

The Community Resource theory developed through navigational dealings, and places emphasis on a community of interests created by the natural and physical unity of a watercourse.³⁷ These interests include present and prospective uses of the watercourse, in addition to concern for the health of the ecosystem.³⁸ The interests are influenced by a wide variety of economic, societal, and environmental factors.³⁹ This theory reinforces and extends the doctrine of limited territorial sovereignty, particularly the aspect of equitable utilization, in that it mandates a high degree of cooperation in common management and more accurately illustrates the watercourse system as a unity shared by all riparian states.⁴⁰ As one commentator observes:

Fundamentally, this theory seeks to achieve economic efficiency and the greatest beneficial use possible, though often at the cost of equitable distribution and benefit among the states sharing the resource. Furthermore, founded on the principles of “natural law,” it ignores all national boundaries and regards the entire hydrologically connected water system as a single economic and geographic unit.⁴¹

Herein lies the problem with the community resource theory and explains why it will, as one scholar argues, “never become customary international law nor a principle of international law recognized by [the world’s major legal systems].”⁴² In trying to regulate the entire watershed basin, rather than just the watercourse, this theory ends up regulating more territory than permitted.⁴³

³⁵ *Id.*

³⁶ *Id.*

³⁷ Spiegel, *supra* note 15, at 337.

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ Eckstein, *supra* note 29, at 80–81.

⁴² Upadhye, *supra* note 30, at 71. Eckstein also echoes this view: “While the community of interests theory may be regarded as the most efficient and advantageous for the international management of shared transboundary natural resources, its acceptance within the international community is sparse.” See Eckstein, *supra* note 29, at 81–82.

⁴³ Upadhye, *supra* note 30, at 71.

2. Customary International Law

Douglas Jehl's article, *In Race to Tap the Euphrates, the Upper Hand is Upstream*, published in *The New York Times*⁴⁴ on the eve of the 2002 United Nations World Summit on Sustainable Development, called attention to the lack of an international legal regime for resolving conflicting claims over shared transboundary water resources: "Despite efforts by the United Nations and others, the world has yet to come up with an accepted formula on how shared waters should be divided. That situation applies to nearly 300 rivers, including the Nile, the Danube, the Colorado, and the Rio Grande, all subject to major disputes."⁴⁵ Much has changed since Jehl raised this issue almost a decade and a half ago. In the ensuing period, state practice has given rise to a substantial number of international rules, norms, and guidelines on the management of transboundary water resources,⁴⁶ to a point where it can confidently be asserted that a customary international legal regime for the management of transboundary natural resources is now available. Evidence of this customary law "can be gleaned from a variety of sources, including historically important and representative treaties, [arbitral awards,] and recent framework watercourse treaties such as the 1997 United Nations Convention on the Law of Non-navigational Uses of International Watercourses."⁴⁷

Mention should also be made of the important role international judicial decisions have played in the progressive development and codification of the customary rules of international environmental law. Over the years, international tribunals have stepped in to settle disputes over transboundary waters between riparian countries in such notable cases as the *Case Relating to the Territorial Jurisdiction of the International Commission of the River Oder*,⁴⁸ the *Diversion of Water from the Meuse Case*,⁴⁹ the *Trail Smelter Case*,⁵⁰ the *Corfu*

⁴⁴ Douglas Jehl, *In Race to Tap the Euphrates, The Upper Hand is Upstream*, N.Y. TIMES, Aug. 25, 2002, at 1, 6, quoted in WESTON ET AL., *supra* note 22, at 1177.

⁴⁵ *Id.*

⁴⁶ See Eric W. Sievers, *Transboundary Jurisdiction and Watercourse Law: China, Kazakhstan, and the Irtysh*, 37 TEX. INT'L L. J. 1, 14 (2002).

⁴⁷ *Id.*

⁴⁸ (U.K. v. Pol.), 1929 P.C.I.J. (ser. A) No. 23 at 5 (Sept. 10), available at http://www.worldcourts.com/pcij/eng/decisions/1929.08.20_river_oder_annex_3_to_1929.09.10_river_oder.htm.

⁴⁹ (Neth. v. Belg.), 1937 P.C.I.J. (ser. A/B) no. 70, at 4 (June 28), available at http://www.worldcourts.com/pcij/eng/decisions/1937.06.28_meuse.htm.

Channel Case,⁵¹ the *Lac Lanoux Case*,⁵² and the *Gabčíkovo–Nagymaros Case*.⁵³ The most recent and probably the most important dispute over water brought before an international tribunal is the case of *Gabčíkovo–Nagymaros*,⁵⁴ involving Hungary, Czechoslovakia, and later as a successor state, Slovakia.⁵⁵ Following a 1977 treaty, Hungary and Czechoslovakia agreed to build a series of dams and barrages on the Danube River.⁵⁶ Hungary, the downstream riparian, later stopped work on its portion of the project and tried to terminate the treaty, claiming environmental concerns in reliance on the no harm rule.⁵⁷ However, the International Court of Justice (ICJ) invoked the U.N. Convention's doctrine of equitable utilization, explicitly affirming its status as customary international law by stating, "[the suspension and withdrawal of Hungary's consent] cannot mean that Hungary forfeited its basic right to an equitable and reasonable sharing of the resources of an international watercourse."⁵⁸ The significance the ICJ accorded the U.N. Convention, barely four months into its adoption, is specifically attested to in Paragraph 147:

Re-establishment of the joint regime will also reflect in an optimal way the concept of common utilization of shared water resources for the achievement of the several objectives mentioned in the Treaty, in concordance with Article 5, paragraph 2, of the Convention on the Law of the Non-Navigational Uses of International Watercourses⁵⁹

This idea of a shared watercourse community of interest based on equitable utilization is reaffirmed in paragraph 85⁶⁰ and again in paragraph 150.⁶¹

⁵⁰ (U.S. v. Can.), 3 R.I.A.A., 1905, (Mar. 11, 1949 & Apr. 16, 1938), *available at* http://untreaty.un.org/cod/riaa/cases/vol_iii/1905-1982.pdf.

⁵¹ (U.K. v. Alb.), 1949 I.C.J. 4 (Apr. 9), *available at* http://www.worldcourts.com/icj/eng/decisions/1949.04.09_corful.htm.

⁵² (Fr. v. Spain), 12 R.I.A.A. 281 (Nov. 16, 1957), *available at* <http://www.ecolex.org/server2.php/libcat/docs/COU/Full/En/COU-143747E.pdf>.

⁵³ *Gabčíkovo–Nagymaros Project* (Hung./Slovk), 1997 I.C.J. 7 (Sept. 25), *available at* <http://www.icj-cij.org/docket/files/92/7375.pdf>.

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.* at 14–18.

⁵⁷ *Id.* at 25.

⁵⁸ *Id.* at 54.

⁵⁹ *Id.* at 80.

⁶⁰ "The Court considers that Czechoslovakia, by unilaterally assuming control of a shared resource, and thereby depriving Hungary of its right to an equitable and reasonable

The international customary law regime on transboundary water resources is further enriched by soft law principles of environmental protection, which are derived from general principles of law, judicial decisions, and the resolutions and recommendations of international organizations.⁶²

a. The Doctrine of Reasonable and Equitable Utilization

The doctrine of equitable utilization that allows a basin state “reasonable” and “equitable” utilization of transboundary water resources reflects customary international law on this subject.⁶³ Viewed as a “shifting middle ground” between the theories of limited territorial sovereignty and community of interests,⁶⁴ the principle was first formulated in the 1966 Helsinki Rules on the Uses of the Waters of International Rivers, followed by the 1991 United Nations International Law Commission Draft Articles on the Law of the Non-navigational Uses of International Watercourses that presaged the 1997 United Nations Convention on the Non-navigational Uses of International Watercourses,⁶⁵ and the 2004 Berlin Rules on Water Resources, which revised and now supersede the 1966 Helsinki Rules.⁶⁶

share of the natural resources of the Danube . . . failed to respect the proportionality which is required by international law. . . .” *Id.* at 56 (emphasis added).

⁶¹ In this case, the consequences of the wrongful acts of both Parties will be wiped out . . . if they resume their co-operation in the utilization of the shared water resources of the Danube, and if the multi-purpose programme, in the form of a co-ordinated single unit, for the use, development and protection of the watercourse is implemented in an *equitable and reasonable manner*.

Id. at 80 (emphasis added).

⁶² ANTOINETTE HILDERING, INTERNATIONAL LAW, SUSTAINABLE DEVELOPMENT AND WATER MANAGEMENT 11 (2005).

⁶³ See International Law Association, Berlin Conference on Water Resources Law, 71 Int’l L. Ass’n Rep. Conf. 334, art. XII (2004) [hereinafter Berlin Rules] (revising the Helsinki Rules and Other International Law Association Rules on Water Resources, available at http://internationalwaterlaw.org/documents/intldocs/ILA_Berlin_Rules-2004.pdf).

⁶⁴ Sievers, *supra* note 46, at 16.

⁶⁵ See generally G.A. REP., *Convention on the Law of Non-navigational Uses of International Watercourses*, 51st Sess., U.N. Doc. A/51/869 (Apr. 11, 1997), reprinted in 36 I.L.M. 700 (1997). Adopted by Resolution 51/229 of 21 May 1997 by the U.N. General Assembly by vote of 103 States for; 3 States against (Burundi, China, and Turkey), and 27 abstaining. Muhammad Mizanur Rahaman, *The Potentials of International Water Laws Toward Achieving Integrated Ganges Basin Management*, 3-178 XII WORLD WATER CONGRESS (Nov. 22–25, 2005), available at http://users.tkk.fi/~mizanur/WaterLaw_Rahaman2005.pdf. To date only twelve States have ratified it with sixteen signatories. *Id.* It requires thirty-five ratifications for entry into force. *Id.* Although it is not yet in force, the U.N. Convention on the Law of the Non-navigational Uses of International

The doctrine is grounded in the principle of *sic utere tuo ut alienum non laedus*, or one must use one's own so as not to do injury to another, first articulated in an environmental context in the 1941 Trail Smelter arbitration between the United States and Canada.⁶⁷ The maxim was rearticulated in Article 12 of the Berlin Rules on Water Resources, where each State is under an obligation to "manage the waters of an international drainage basin in an equitable and reasonable manner having due regard for the obligation not to cause significant harm to other basin States."⁶⁸ Article 13 of the Berlin Rules defines "equitable and reasonable" as something to be determined through "consideration of all relevant factors in each particular case"⁶⁹—in other words, following a cost-benefit analysis. These relevant factors are enumerated, in almost identical language, in Article 13 of the Berlin Rules⁷⁰ as well as Article 6 of the U.N. Convention.⁷¹

Watercourses is considered to be an authoritative codification of customary international law on transboundary watercourses. *Id.* at 3-179.

⁶⁶ See Berlin Rules, *supra* note 63, pt. 2, art. 12.

⁶⁷ See *Trail Smelter Case* (U.S. v. Can.), 3 R.I.A.A., 1905, (Mar. 11, 1941 & Apr. 16, 1938), available at http://untreaty.un.org/cod/riaa/cases/vol_III/1905-1982.pdf.

⁶⁸ Berlin Rules, *supra* note 63, pt. 2, art. 12. Similar language is found in article 7 of the U.N. Convention on the "Obligation not to cause significant harm." U.N. GAOR, *Convention on the Law of Non-navigational Uses of International Watercourses*, 51st Sess., Supp. No. 49, at 5 (1997) [hereinafter *Convention on International Watercourses*], available at http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf.

Watercourse States shall, in utilizing an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States[;] 2. Where significant harm nevertheless is caused to another watercourse State, the States whose use causes such harm shall, in the absence of agreement to such use, take all appropriate measures, having due regard for the provisions of articles 5 and 6, in consultation with the affected State, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.

Id.

⁶⁹ Berlin Rules, *supra* note 63, art. 13.

⁷⁰ *Id.*

⁷¹ *Convention on International Watercourses*, *supra* note 68, at 5. It provides:

1. Utilization of an international watercourse in an equitable and reasonable manner within the meaning of article 5 requires taking into account all relevant factors and circumstances including

- a) Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;
- b) The social and economic needs of the watercourse States concerned;

The principle of equitable utilization as entrenched in Article 12 of the Berlin Rules is now widely accepted as the basis for the management of the waters of an international drainage basin.⁷² Article 12 is based on the language of the United Nations Convention on the Law of Non-navigational Uses of International Watercourses (U.N. Convention), without limiting it to watercourses.⁷³ This formulation reflects the approach of the original Helsinki Rules and is consistent with the emphasis on “conjunctive management” found in Article 5 of the Berlin Rules which provides that “States shall use their best efforts to manage surface waters, groundwater, and other pertinent waters in a unified and comprehensive manner.”⁷⁴ The phrasing of Article 12 emphasizes that the right to an equitable and reasonable share of the benefits of transboundary water resources carries with it

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- c) The population dependent on the watercourse in each watercourse State;
 - d) The effects of the use or uses of the watercourses in one watercourse State on other watercourse States;
 - e) Existing and potential uses of the watercourse;
 - f) Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect;
 - g) The availability of alternatives, of comparable value, to a particular planned or existing use. . . .

3. The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is a reasonable and equitable use, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.

Id.

⁷² While conceding that the reasonable and equitable use doctrine is by and large the most popular theory on watercourse exploitation, Shashank Upadhye cautions that “this theory is the emerging trend and perhaps might, but has not yet, become unequivocal customary international law.” Upadhye, *supra* note 30, at 72.

⁷³ Article 5 of the U.N. Convention captures this doctrine of equitable and reasonable utilization and participation by providing that:

1. States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilization thereof and benefits therefrom, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse. 2. Watercourse States shall participate in the use, development and protection of an international watercourse in an equitable and reasonable manner. Such participation includes both the right to utilize the watercourse and the duty to cooperate in the protection and development thereof, as provided in the present Convention.

Convention on International Watercourses, *supra* note 68, at 4.

⁷⁴ See Berlin Rules, *supra* note 63, art. 5.

certain duties that can only be fulfilled by acting “in an equitable and reasonable manner having due regard for the obligation not to cause significant harm to other basin States.”⁷⁵ Both the Berlin Rules and the U.N. Convention expressly decline to give priority to any one use. Article 10 of the latter declares:

1. In the absence of agreement or custom to the contrary, no use of an international watercourse enjoys inherent priority over other uses. 2. In the event of a conflict between uses of an international watercourse, it shall be resolved with reference to articles 5 to 7, with special regard being given to the requirements of vital human needs.”⁷⁶

This language puts paid to the doctrines of absolute territorial sovereignty and absolute territorial integrity, which held respectively that an upstream state has exclusive and absolute sovereignty over the waters found within its territory and that downstream states have the right to receive the same quantity of water that they have historically received. The failure to endorse either doctrine offers strong evidence that they do not embody customary law governing transboundary watercourses.⁷⁷

In summary, the core of transboundary watercourse law as codified in the U.N. Convention and the Berlin Rules on Water Resources recognize six customary law norms—at the center of which is the principle of equitable utilization.⁷⁸ To this should be added the requirement of prior notice to any diversion,⁷⁹ the requirement of consultation prior to any diversion that will result in a substantive or material decrease in the quantum of water flow to a lower riparian,⁸⁰ the rule of automatic succession for treaties that regulate boundary waters and navigation,⁸¹ a presumption of illegality for any diversion

⁷⁵ *Id.* art. 12.

⁷⁶ *Id.* art. 10. “In determining an equitable and reasonable use, States shall first allocate waters to satisfy vital human needs.” *Id.* art. 14.

⁷⁷ See Sievers, *supra* note 46, at 14–23.

⁷⁸ *Id.*

⁷⁹ See Lake Lanoux Arbitration, (Fr. v. Spain), 12 R.I.A.A. 281 (Nov. 16, 1957), available at <http://www.ecolex.org/server2.php/libcat/docs/COU/Full/En/COU-143747E.pdf>.

⁸⁰ *Id.*; see also Diversion of Water from the Meuse (Neth. v. Belg.), 1937 P.C.I.J. (ser. A/B) No. 70, at 4 (June 28), available at http://www.worldcourts.com/pcij/eng/decisions/1937.06.28_meuse.htm; Gabčíkovo–Nagymaros Project (Hung./Slovk), 1997 I.C.J. 7 (Sept. 25).

⁸¹ See Vienna Convention on Succession of States in Respect of Treaties, art. 11, 12, Aug. 23 1978, 1946 U.N.T.S. 3.

that interrupts navigation, and a presumption of illegality for any diversion that will result in an environmental or human tragedy.⁸² These norms are binding on all states as customary international law and can be invoked in resolving conflicting claims over the management of transboundary water resources as well as in interpreting other general or specific transboundary watercourses agreements that are binding on the parties to a controversy, regardless of whether the U.N. Convention is itself binding on those parties.⁸³

II

INTERNATIONAL ENVIRONMENTAL LAW IN THE BRAZILIAN LEGAL SYSTEM

A. Monism or Dualism in the Brazilian Legal System

Two distinct systems—monism and dualism—have developed with respect to the incorporation of international law into domestic law.⁸⁴ Some states follow the monist system while others prefer the dualist approach—though it is rare to find a national legal system that depends entirely on one or the other.⁸⁵ Monism is based on the idea that international law and domestic law are parts of a single unitary legal system, although international law is higher in prescriptive value than national law. In the monist system, international law is automatically incorporated into the domestic legal order. In the case of a conflict between the two the former will, because of its superiority, quite naturally prevail over domestic law.⁸⁶ The dualist approach, by contrast, assumes that international law and domestic law are separate and distinct legal systems that operate on different levels.⁸⁷ International law can only be enforced by national law if it is subjected to a process of incorporation or transformation through domestic legislation.⁸⁸ International law, under the dualist system, is

⁸² See Gabčíkovo–Nagymaros Project (Hung./Slovak), 1997 I.C.J. 7 (Sept. 25).

⁸³ See Stephen C. McCaffrey & Mpazi Sinjela, *Current Developments: The 1997 United Nations Convention on International Watercourses*, 92 AM. J. INT'L. L. 97, 106–07 (1998).

⁸⁴ Circle of Rights, *Strategies for Enforcing ESC Rights Through Domestic Legal Systems*, <http://www1.umn.edu/humanrts/edumat/IHRIP/circle/modules/module22.htm> (last visited Apr. 19, 2011).

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

not self-executing because it must first undergo a process of domestication before it becomes binding as a matter of national law.⁸⁹

*1. The Status of Customary International Law in the Brazilian Legal Order*⁹⁰

In developing the shared resources of the Amazon Basin, Brazil is bound to respect the customary international law against any inequitable and unreasonable utilization that infringes on co-riparian interests as well as other soft law principles concerning the environment. It is therefore of some interest to find out what tradition the Brazilian legal system relies on for domesticating international law norms and how these are applied by national courts in resolving competing claims between and among co-riparians over the resources of the Amazon Basin. As a general rule in the Brazilian legal system, international customs and general principles of law are automatically incorporated into domestic law and are directly applicable before national courts. The automatic incorporation means that Brazilian courts have recourse to international customs and general principles of law that can be applied directly when these norms assume the status of binding international law. In other words, no act or procedure of incorporation is necessary. This approach is based on monistic theory.

The Brazilian legal system recognizes international custom as a formal source of law. Article 4° of Decree-Law 4.657/1942—also known as *Lei de Introdução ao Código Civil Brasileiro*, and which sets forth the Brazilian Civil Code—provides that “[w]hen the law is silent, the judge shall decide the case based on analogy, customs and general principles of law.”⁹¹ This provision of the *Lei de Introdução ao Código Civil* clearly establishes that the application of any rule of customary law is subject to nonexisting legal dispositions on the

⁸⁹ *Id.*

⁹⁰ The discussion on the status and applicability of customary rules of international law and general principles of law in the Brazilian legal system is based on original work taken from Professor Fausto Gonzaga’s dissertation “International Environmental Law and the Protection of Transboundary Water Resources in the Amazon Region,” submitted in partial fulfillment of the requirements of the degree of Doctor of Juridical Science at SMU Dedman School of Law.

⁹¹ Decreto No. 4.657 de 4 de Setembro de 1942, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 9,9,1942 (Braz.).

matter.⁹² Only in the absence of such legal disposition can a Brazilian court apply customary law; provided, however, that the integration of the norm by analogy has been previously attempted. Under this legal scheme, codified norms are consulted first because they are a primary source of the law. By contrast, customary law is considered a secondary source of law since its enforcement is dependent upon the prior application of an existing codified law. Furthermore, where the law is silent, gaps will be filled by use of analogy. It is only after the analogy has been applied that a Brazilian court is free to consider customary rules of law.

The Brazilian approach is quite consistent with what prevails in most civil law systems, where judges very often are compelled to base their judgment upon the codified law, expecting to find in written norms—and even utilizing several interpretation techniques—all the elements believed to be necessary to resolve conflicting claims. Notwithstanding its status as a secondary source of law within the Brazilian legal system, customs play a prominent role in the elaboration of international positive law, either by contributing to the definition of rights and obligations in areas not reached by binding international treaties or by presenting the cognitive elements necessary for the interpretation or integration of conventional norms already in place. Consequently, the enforcement of customs within the Brazilian domestic judicial system is done in such a way that it prevents the Romano-Germanic tradition from being an impediment to the efficacy of such an important source of international law.

2. General Principles of Environmental Law in the Brazilian Legal System

Much like international customs, general principles of law are automatically incorporated into the domestic Brazilian legal order and freely applied by national courts. It is not uncommon to incorporate general principles of international environmental law into the very structure of the law, transforming them into codified principles of law. In the context of this study, those general principles of international or domestic law that are normally singled out by Brazilian scholars and courts as binding on matters related to the environment will be examined. These principles do not represent the universe of all existing general principles of law that can be applied within the

⁹² See Decreto No. 4.657 de 4 de Setembro de 1942, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 9,9,1942 (Braz.).

Brazilian legal system. Rather, they should be seen as representing only the most common guidelines relied on by Brazilian jurists. A complete picture of Brazil's environmental regime will include the general principles enumerated below as well as other principles that relate to the Brazilian public law—particularly constitutional and administrative law—in addition to other general principles of environmental law not necessarily addressed in this study.

a. Principle of Legality

The principle of legality derives from Article 5, Section II, of the Brazilian Federal Constitution, which guarantees that “no one shall be obliged to do or refrain from doing something except by virtue of law.”⁹³ As a consequence of such acknowledgment of the rule of law, all persons must pay absolute obedience to the legal regime.⁹⁴ In other words, both citizens and the State must act in absolute compliance with the rule of law.⁹⁵

Keeping in mind that legality is the fundamental characteristic of the so-called state of law, imposing upon states the duty to abide by the very laws they issue, Professor Hely L. Meirelles teaches us the following classic lesson:

In public administration, there is no personal freedom or desire. While in private administration it is lawful to do everything that the law does not prohibit, in public administration it is only permitted to do what the law authorizes. For private matters, the law means, “it is fine to do this way,” whereas for the public administrator, it means “it *must* be done this way.”⁹⁶

In the same vein, Bandeira de Mello observes:

⁹³ CONSTITUIÇÃO FEDERAL, [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 5, § II (Braz.).

⁹⁴ One must note that the so-called “rule of law” originated in England, from the Act of Settlement, 1701. Act of Settlement, 1701, 12 & 13 Will. 3, c. 2, § 3 (Eng.). With the practice of said act, the implementation of the system of Jurisdictional Control, or judicial control, was made possible. AM. POLITICAL SCI. ASS'N., PROCEEDINGS OF THE AMERICAN POLITICAL SCIENCE ASSOCIATION 33 (1906). As a consequence, autonomy was given to judges—the Judiciary—in order to decide freely, without interferences from the sovereign, any complaint against public officials. *Id.* at 31–34. Put in a different way, it was recognized that everyone should be bound before the law, regardless of political or economical power. *Id.* The law is above all, including the monarch. It is the rule of law. *Id.*

⁹⁵ AM. POLITICAL SCI. ASS'N., PROCEEDINGS OF THE AMERICAN POLITICAL SCIENCE ASSOCIATION 31–34 (1906).

⁹⁶ HELY LOPES MEIRELLES ET AL., DIREITO ADMINISTRATIVO BRASILEIRO 89–90 (Malheiros ed., 1997).

Thus, the principle of legality is the complete submission of Administration to the laws. Administration must simply obey the laws, abide by them, and enforce them. That is the reason why the activity of all of its agents, from the one occupying the cusp position, i.e., the President, to the lowest position in the hierarchy, must be docile, reverent, extremely respectful, and compliant of the general dispositions established by the Legislative Power, because that is its role in the Brazilian legal order.⁹⁷

b. Principle of Supremacy and the Inalienability of Public Interests

Within the Brazilian doctrine and jurisprudence there is a harmonious understanding that the domestic régime of public law is supported by two basic principles: the supremacy of public interest over private concerns and the inalienability by the administration of public interests.⁹⁸ When applied within the environmental context, this principle is the underlying strength of Article 225 of the Brazilian Federal Constitution of 1988, which states that an ecologically balanced environment is “an asset of common use and essential to a healthy quality of life, and both the Government and the community shall have the duty to defend and preserve it for present and future generations.”⁹⁹

The intent of this constitutional mandate is to preserve the balance in the relationship between humankind and the environment.¹⁰⁰ It does not establish the environment itself as an “asset of common use”; rather it focuses on the healthy and balanced relationship that must exist between humankind and the environment.¹⁰¹ Nor does it have the scope to discipline issues of ownership, regulating instead rights that belong to the entire society. In essence, this rule’s primary purpose is to bring equilibrium into the interaction between humans and the environment.¹⁰² Therefore, environmental protection is an

⁹⁷ CELSO ANTÔNIO BANDEIRA DE MELLO, CURSO DE DIREITO ADMINISTRATIVO 101 (2006).

⁹⁸ According to Professor Celso Antônio Bandeira de Mello, such foundations can be defined as follows: (1) supremacy of public interest over private interest—“It is a true axiom recognizable in the modern public law. It asserts the superiority of the collective interest, upholding its prevalence over private concerns, as a matter of survival and, in fact, continuity of the latter;” (2) inalienability of public interest—“when the interests can be identified as those of the community, . . . they will be available to no one.” *Id.* at 69–70.

⁹⁹ CONSTITUIÇÃO FEDERAL, [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 225 (Braz.).

¹⁰⁰ *Id.* (stating it is the government’s duty to “preserve and restore essential ecological processes and provide ecological handling of the species and ecosystems”).

¹⁰¹ *Id.*

¹⁰² This can be in any form of environment: natural, artificial, cultural, and labor. *See id.*

inalienable and unequivocal collective public interest that must be allowed to prevail over private interests and individual rights.

c. Principle of an Ecologically Balanced Environment as Fundamental to Human Rights

The best way to understand international environmental law is through the human rights prism. Proclamation n° 1 as well as Principle n° 1 of the 1972 Stockholm Declaration not only acknowledge the existence of rights to a balanced environment, but also describe them as fundamental guarantees.¹⁰³ From the perspective of the domestic legal system, the Brazilian Constitution is in complete agreement with this position because it has entrenched the inviolability of the right to life, to liberty, to equality, to security, to health, and to human dignity.¹⁰⁴

d. Principle of Intergenerational Solidarity

This general principle of law addresses the need to promote better stewardship of the environment for the benefit of both the present as well as future generations.¹⁰⁵ It gives a very practical directive, relying strongly on the need to preserve today's natural resources in order to benefit from them later.¹⁰⁶ Such an approach is contemplated in several parts of the 1972 Stockholm Declaration, following the directives expressed in Principle 2 that "natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations"¹⁰⁷

It is important to stress that solidarity—the protection and betterment of the environment—should not be exercised regarding future generations only, as in diachronic solidarity, but also among present generations—synchronic solidarity. This reminds us of the

¹⁰³ See 1972 Declaration of the United Nations Conference on the Human Environment, June 16, 1972, U.N. Doc. A/Conf.48/14/Rev.1 (1973), 11 I.L.M. 1416, 1416–18 [hereinafter Stockholm Declaration], available at <http://www.unep.org/Documents.Multilingual/Default.asp?documentid=97&articleid=1503>.

¹⁰⁴ See CONSTITUIÇÃO FEDERAL, [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 1, 5, 6, 196, 225 (Braz.)

¹⁰⁵ Vern L. Bengtson & Petrice S. Oyama, U.N. Dep't. of Econ. & Soc. Affairs, *Intergenerational Solidarity: Strengthening Economic and Social Ties* (Oct. 23–25, 2007), available at http://www.un.org/esa/socdev/unyin/documents/egm_unhq_oct07_bengtson.pdf.

¹⁰⁶ *Id.*

¹⁰⁷ Stockholm Declaration, *supra* note 103, at 1418.

need to pursue not only the protection of future rights on behalf of an indeterminate group of people. It is equally important to ensure that the present generation will have access to the natural resources needed for the fulfillment of all its needs. Therefore, a point of equilibrium must be found where the rights of both the present and the future generations are balanced.¹⁰⁸

The principle of intergenerational solidarity is found in Article 225 of Brazil's Federal Constitution.¹⁰⁹ This provision clearly imposes on the State and the community as well the duty to safeguard and preserve the ecologically balanced environment for the present generation and for the generations to come. As one can see, the principle of intergenerational solidarity has a strong moral character, acting almost as a universal public policy to be followed by everyone, favoring both present and future generations.

e. Principle of Public Environmental Protection

As mentioned earlier, the right to a balanced environment is a basic and essential guarantee, granted to the whole community in a general and impersonal way.¹¹⁰ This right is public by nature, and should be implemented and protected by the State. Such an obligation towards the effectiveness of environmental rights is imposed upon the Brazilian State by the Federal Constitution throughout Article 225.¹¹¹ This is a comprehensive legal regime encompassing a substantial number of restrictions and duties that have deeply influenced the establishment of Brazilian public policies concerning the environment.¹¹²

¹⁰⁸ See generally Jeffrey M. Gaba, *Environmental Ethics and Our Moral Relationship to Future Generations: Future Rights and Present Virtue*, 24 COLUM. J. ENVTL. L. 249 (1999) (providing a comprehensive analysis of intergenerational solidarity from an ethical perspective).

¹⁰⁹ CONSTITUIÇÃO FEDERAL, [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 225 (Braz.) ("All have the right to an ecologically balanced environment, which is an asset of common use and essential to a healthy quality of life, both the Government and the community shall have the duty to defend and preserve it for present and future generations.").

¹¹⁰ See *supra* Part II.2.c.

¹¹¹ CONSTITUIÇÃO FEDERAL, [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 225 (Braz.).

¹¹² *Id.* Article 225 states:

In order to ensure the effectiveness of this right, it is incumbent upon the Government to: I. preserve and restore the essential ecological processes and provide for the ecological treatment of species and ecosystems; II. preserve the diversity and integrity of the genetic patrimony of the country and to control entities engaged in research and manipulation of genetic material; III. define, in all units of the Federation, territorial spaces and their components which are to

f. The Precautionary Principle

Assuming that much environmental damage is in fact irreversible, the precautionary principle imposes on the State the duty to anticipate any possible future event that might cause harm to the environment.¹¹³ Such a directive can be found in Principle 15 of the Rio Declaration, which states: “In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”¹¹⁴

Principle 15 emphasizes the fact that implementation of preventive actions shall respect the capacity of each State that signed the Convention in relation to their capabilities.¹¹⁵ Such concern in the Brazilian legal system is known as the possibility clause, or *reserva do possível*.¹¹⁶ It means that the duty to adopt preventive measures to defend the environment could theoretically be lessened by the eventual and justified impossibility of being provided for by the State.¹¹⁷ The possibility clause demonstrates a clear connotation of a subjective order regarding the imposition of measures considered

receive special protection. [A]ny alterations and suppressions being allowed only by means of law, and any use which may harm the integrity of the attributes which justify their protection being forbidden; IV. require in the manner prescribed by law, for the installation of works and activities which may potentially cause significant degradation of the environment, a prior environmental impact study, which shall be made public; V. control the production, sale and use of techniques, methods or substances which represent a risk to life, the quality of life and the environment; VI. promote environment education in all school levels and public awareness of the need to preserve the environment; VII. protect the fauna and the flora, with prohibition, in the manner prescribed by law, of all practices which represent a risk to their ecological function, cause the extinction of species or subject animals to cruelty.

Id.

¹¹³ United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3–4, 1992, *Rio Declaration on Environment and Development*, 3, U.N. Doc. a/CONF.151/26/Rev.1 (Vol. 1), Annex I (Aug. 12, 1992) [hereinafter *Rio Declaration*], available at http://www.c-fam.org/docLib/20080625_Rio_Declaration_on_Environment.pdf.

¹¹⁴ *Id.*

¹¹⁵ *See id.*

¹¹⁶ MARGA INGE BARTH TESSLER, O DIREITO À SAÚDE 75–108. (Porto Alegre: Revista do TRF 4a Região 2001).

¹¹⁷ *Id.*

preventive.¹¹⁸ There is no objective element that could indicate with absolute certainty whether certain States have the capability to take the required preventive action.¹¹⁹ For this reason, it is important that protective measures be adopted in a reasonable and balanced way in order to guarantee adequate tutelage to an environment undergoing constant and intense mutations.

Another interesting aspect of Principle 15 lies in the fact that the absence of absolute scientific certainty should not be used as an excuse for postponing preventive measures against environmental degradation.¹²⁰ Consequently, in cases where there is doubt regarding possible action or behavior that might cause damage, every economically viable preventive measure should be taken as a precaution. This is a natural result of the principle *in dubio pro ambient*, the application of which can be found in several instances in domestic Brazilian law, such as (1) a legal demand for a previous environmental impact assessment, or Estudos de Impacto Ambiental (EIA), and a relation of impacts to the environment, or Relatório de Impacto sobre o Meio Ambiente (RIMA),¹²¹ (2) the preventive exercise of police power, placing restrictions on individual rights in order to preserve collective interests related to the environment; and (3) government interventions in matters of private property when it is necessary for the protection of the environment.

g. Principle of Sustainable Development

One of the objectives of the 1992 U.N. Conference on Environment and Development that gave birth to the Rio Declaration was the implementation of mechanisms to guarantee the balance between the right to economic growth and the right to an ecologically balanced environment. The issue of sustainable development is captured in Principles 2 and 4.¹²²

Principle 2—States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ See *Rio Declaration*, *supra* note 113, at 1–2.

¹²¹ See CONSTITUIÇÃO FEDERAL, Oct. 5, 1988, art. 225 § IV (Braz.) (“In order to ensure the effectiveness of this right, it is incumbent upon the Government to: . . . IV. demand, in the manner prescribed by law, for the installation of works and activities that may potentially cause significant degradation of the environment, a prior environmental impact study, which shall be made public . . .”).

¹²² *Rio Declaration*, *supra* note 113, at 1–2.

right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Principle 4—In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.¹²³

These common sense prescriptions are based on the fact that natural resources—which are essential to human life—can become extinct, since they are not renewable in an absolute and eternal way. Therefore, the natural human instinct of self-preservation of the species could not take us in any other direction but the intentional and consistent quest of striking a comfortable balance between economic growth on one hand, and preservation of the environment on the other.

Professor Fiorillo asserts that:

[T]he principle of sustainable development has in its core the protection of the basic vital production and reproduction of humankind and their activities, safeguarding at the same rate the relationship between humans and the environment so that future generations may have the opportunity to enjoy the same resources that is available to us today.¹²⁴

He goes on to add that “[t]he preservation of the environment and economic growth must coexist without annihilation of either one.”¹²⁵

In the Brazilian legal system, the principle of sustainable development is expressed in Article 170, section VI, of the Federal Constitution:

The economic order, founded on the appreciation of the value of human work and on free enterprise, is intended to ensure everyone a life with dignity, in accordance with the dictates of social justice, with due regard for the following principles:

...

VI—environment protection, including by means of different treatments in accordance to the environmental impact of products and services and their respective production and rendering;¹²⁶

¹²³ *Id.*

¹²⁴ CELSO ANTÔNIO PACHECO FIORILLO, *CURSO DE DIREITO AMBIENTAL* (2010).

¹²⁵ *Id.*

¹²⁶ CONSTITUIÇÃO FEDERAL, [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 186 (Braz.).

These constitutional provisions clearly demonstrate that on the domestic legal plane, Brazil is in full compliance with Principles 2 and 4 of the Rio Declaration. The provisions are further evidence that these principles do not constitute obstacles to social development and economic growth, but instead seek to balance the two principles while utilizing available natural resources.

h. The Socio-Environmental Principle

Under the provisions on Fundamental Rights and Guarantees in the Federal Constitution—particularly in Article 5, section XXIII, FC/88—the inviolability of property is guaranteed to Brazilians as well as foreigners residing in the country.¹²⁷ However, it is important to emphasize that the Federal Constitution not only safeguards property rights but also imposes on property owners the duty to pursue their social functionality.¹²⁸ Carvalho Filho, quoting Roberto Dromi, reminds us that “the individualistic perspective towards property has long been discarded, and the understanding today is that property rights, much more than an end in itself, is characterized as a means to achieve social well-being.”¹²⁹ This principle of socio-environmental purpose is entrenched in Brazil’s Federal Constitution¹³⁰ as well as in the new Brazilian Civil Code.¹³¹

¹²⁷ *Id.* art. 5, § XXII.

¹²⁸ *Id.* art. 5, § XXIII (“ownership of property shall attend to its social function;”).

¹²⁹ See JOSÉ DOS SANTOS CARVALHO FILHO, *MANUAL DE DIREITO ADMINISTRATIVO* X (2006).

¹³⁰ See CONSTITUIÇÃO FEDERAL [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 186, § II (Braz.). Article 186 states:

The social function is met when the rural property complies simultaneously with, according to the criteria and standards prescribed by law, the following requirements:

I—rational and adequate use;

II—adequate use of available natural resources and preservation of the environment;

III—compliance with the provisions that regulate labor relations;

IV—exploitation that favors the well-being of the owners and laborers.

Id.

¹³¹ See CÓDIGO CIVIL [C.C.] Jan. 1, 1917, art. 1, 228, § 1 (Braz.). The section states:

The owner may use, enjoy and dispose of the property, and the right to reclaim it from anyone that unjustly retains or possesses it.

§ 1°—The right to property must be exercised in accordance with its social and economic purposes so that it can be protected, in line with the established especial law, regarding the flora, the fauna, the natural beauty, the ecological balance and the historical and artistic property, and also the pollution of the air and waters must be prevented.

Therefore, it is clear that under the Brazilian legal system, the social function of private property will not be completely achieved unless the laws regarding the environment are duly enforced in a manner that guarantees a well-balanced environment.

i. Principle of Publicity

This general principle refers to the requirement that actions taken by public officials be made public,¹³² which reflects on the collective right to a balanced environment. Because the principle of publicity is closely linked to the right of access to information, as provided for in Article 5 of the Federal Constitution,¹³³ it serves as a controlling device. This principle plays a very important role—it allows the public to assess the legitimacy of every government action affecting the public interest taken by the government that might reflect negatively on the environment, including licensing, studies to determine environmental impacts, public concessions, and contracts.

As discussed earlier, unless the principle of publicity is fully enforced, the assessment of other general principles of law regarding the environment will not be possible, for obvious reasons. If a certain act is kept from being publicized, it will be impossible to check its legitimacy.

j. Principle of Public Participation, Community Participation, or the Democratic Principle

Principle 10 of the 1992 Rio Declaration and the Brazilian Federal Constitution establish that the defense and preservation of the environment must be done with the participation of the whole community.¹³⁴ Principle 10 begins with general guidelines to the effect that “[e]nvironmental issues are best handled with participation of all concerned citizens, at the relevant level.”¹³⁵ Principle 10 identifies two distinct lines of action to be pursued to ensure effective

Id.

¹³² Carl Gunnar Janson, *Country Report Sweden: Privacy Legislation and Social Research in Sweden*, in DATA PROTECTION AND SOCIAL SCIENCE RESEARCH 27, 35 (Ekkehard Mockmann & Paul J. Müller eds., 1979).

¹³³ CONSTITUIÇÃO FEDERAL, [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 5 (Braz.).

¹³⁴ *Rio Declaration*, *supra* note 113, at 3; CONSTITUIÇÃO FEDERAL, [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 225 (Braz.).

¹³⁵ *Rio Declaration*, *supra* note 115, at 3.

participation by the general public—appropriate access to information and the opportunity to participate in decision-making processes.¹³⁶

These essential human rights—the right to information, the right to public participation, and the right of access to judicial organs—captured in the Rio Declaration¹³⁷ also find strong support in the Brazilian legal system. Among other measures, the Brazilian Federal Constitution provides the following venues for the exercise of the principle of democratic participation: (1) popular initiative in the statutory lawmaking process (Article 14, III, Article 27, § 4, Article 29, XIII, Article 61, § 2, FC/88); (2) popular participation regarding the policies of collective interest through public hearings (Article 58, § 2, II, FC/88); (3) popular initiative for jurisdictional control of potential harmful acts to the environment, by filing a collective writ of mandamus (Article 5, LXX, FC/88), writ of injunction (Article 5, LXXI, FC/88), collective legal action (Article 5, LXXIII, FC/88), and public civil suit (Article 129, III, FC/88).¹³⁸

k. The Polluter Pays Principle and the User Pays Principle

Bearing in mind the fact that environmental resources are limited yet belong to the whole community, the utilization of resources without any charge or control will generate unjust enrichment for those who use them. Similarly, based on the same collective interest premise, it goes without saying that any activity developed by humankind can generate harmful ripple effects to the environment requiring prompt and adequate redress.

The user pays principle has a basic and very practical nature—forcing the user of environmental resources to bear the responsibility for the cost of utilization. This principle aims to relieve public entities and the community as a whole from their obligation to pay for costs that arise from private environmental exploitation, thus placing the costs upon those who are the direct beneficiaries. In the same vein,

¹³⁶ *Id.* (“Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.”).

¹³⁷ *Id.*

¹³⁸ CONSTITUIÇÃO FEDERAL, [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 14, art 58, § 2, II, art 5, §§ LXX, LXXI, LXXII, LXXIII, art. 129, § 3 (Braz.).

the polluter pays principle imposes on those who pollute the environment the duty to pay for the damage caused by their pollution. It is that simple: anyone responsible for causing environmental harm shall be responsible for all the financial cost involved with cleaning up, repairing, or mitigating the damage.¹³⁹ These general principles are provided in the Federal Constitution¹⁴⁰ as well as in federal legislation.¹⁴¹

1. Principle of International Cooperation

The principle of international cooperation is deeply rooted in the 1992 Rio Declaration, in which the preamble acknowledges the determined quest for “a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of societies and people.”¹⁴² The Rio Declaration contains a number of principles on international cooperation, and envisions this cooperation occurring in a multifaceted manner and in areas such as sustainable development for the eradication of poverty,¹⁴³ conservation, protection, and restoration of the Earth’s ecosystem;¹⁴⁴ improving scientific understanding through exchanges of scientific and technological knowledge;¹⁴⁵ cooperation to promote a supportive and

¹³⁹ See *Rio Declaration*, *supra* note 113, at 4 (“National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.”).

¹⁴⁰ CONSTITUIÇÃO FEDERAL, [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 225 § III (Braz.) (“Conduct and activities considered harmful to the environment shall subject the individual or corporate wrongdoers to penal and administrative sanctions, in addition to the obligation to repair the damages caused.”).

¹⁴¹ Decreto No. 6.938/81, de 02 Setembro de 1981, DIÁRIO OFICIAL DA UNIÃO [D.O.U.] de 31.08.1981 (Braz.). The National Political Environmental aims at: “imposing, on the polluter and predator, the obligation to restore and/or compensate for the damage caused and, on the user, to contribute for using environmental resources with economic profit in mind.” *Id.* § VII.

¹⁴² *Rio Declaration*, *supra* note 113, at 1.

¹⁴³ *Rio Declaration*, *supra* note 113, at 2 (“All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.”).

¹⁴⁴ *Id.* (“States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem. . .”).

¹⁴⁵ *Id.* (“States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of

open international economic system that would lead to economic growth and sustainable development;¹⁴⁶ implementation of international laws relative to environmental damages across borders;¹⁴⁷ adoption of laws by all States to prohibit exchanges of activities or harmful substances to the environment within and across their borders;¹⁴⁸ and exhortation that all States shall peremptorily enforce principles that are applicable towards a sustainable environmental development according to the guidelines found in the Law of Nations.¹⁴⁹

Brazil's approach to the principle of international cooperation is similar to the approach taken by the Rio Declaration. It finds support in Article 4, Section IX, of the Federal Constitution:

The international relations of the Federative Republic of Brazil are governed by the following principles:

...

V. equality among the states;

...

IX. cooperation among peoples for the progress of mankind¹⁵⁰

From a regional perspective, the aforementioned paragraph expresses the following guidelines regarding the Brazilian policy¹⁵¹ towards Latin America:

scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.”).

¹⁴⁶ *Id.* at 3 (“States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.”).

¹⁴⁷ *Id.* (“States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.”).

¹⁴⁸ *Id.* (“States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.”).

¹⁴⁹ *Id.* at 5 (“States and people shall cooperate in good faith and in a spirit of partnership in the fulfillment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.”).

¹⁵⁰ CONSTITUIÇÃO FEDERAL, [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 4 §§ V, IX (Braz.).

¹⁵¹ Principle of ubiquity: Regarding the establishment of domestic or international policies concerning the environment, part of the Brazilian doctrine suggests the presence

Sole paragraph—The Federative Republic of Brazil shall seek the economic, political, social and cultural integration of the peoples of Latin America, with¹⁵² a view to forming a Latin-American community of nations.

It is worth emphasizing that the principle of international cooperation assumes a position of absolute relevance, since the effects of environmental degradation know no boundaries and are capable of being replicated on a global scale with devastating consequences. Yet, controlling this problem proves inefficient when implemented domestically. Therefore, regarding transboundary resources, international cooperation is an absolute necessity in order to ensure any form of adequate environmental protection.

Finally, to the question whether or not a general principle of law may stem from an internal or an external juridical legal system, the following conclusions may be drawn: (1) The general principles of law will be established as formal sources of international law only when they are common to the major legal systems in the world; (2) These principles can be found in positive international law itself, but their effectiveness as a source of the Law of Nations will depend on their acceptance by the major systems of domestic law; (3) Nonbinding international conventions may carry rules of customary international law, from which general principles of international law may derive—however, as stated in (2), the effectiveness of such principles depends on their acceptance by the major legal systems of the world; (4) As established in § 102 of the Restatement 3rd of the Foreign Relations Law of the United States,¹⁵³ the general principles that are common to the major legal systems, even if not incorporated or reflected in customary law or international agreement, may be invoked as supplementary rules of international law where appropriate.

of a specific juridical principle, the so-called principle of ubiquity. In that regard, Fiorillo states that

environmental laws demand not only global “thinking” but also local actions, for only then action against environmental degradation and not only its effects will be possible. In fact, it is necessary to fight the causes of environment degradation and never the symptoms, only. By only avoiding the latter, the conservation of natural resources will be incomplete and partial.

CELSONO ANTÔNIO PACHECO FIORILLO, CURSO DE DIREITO AMBIENTAL 123–24 (2010).

¹⁵² CONSTITUIÇÃO FEDERAL, [c.f.] [CONSTITUTION] Oct. 5, 1988, art. 4 § X (Braz.).

¹⁵³ RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW OF THE UNITED STATES § 102 (1987).

III CONCLUSION

Despite the claim to a right to exercise internal sovereignty over the Brazilian Amazon, customary international law norms as well as general principles of law with respect to the protection and management of the land and water resources of a shared river basin have been automatically incorporated into Brazilian law. This is an implicit admission that “sovereignty no longer merely serves as the source of the state’s claim to manage natural resources in the way it chooses without abiding by international standards.”¹⁵⁴ Following this brief review of Brazil’s efforts at crafting a legal regime aimed at ensuring better environmental protection and the rational use of the Amazon Basin’s water resources, it is our conclusion that the Brazilian legislature has taken great pains to ensure that domestic law is in full compliance with international standards and prescriptions. In this respect, we believe that Brazil’s approach to the protection and management of the Amazon may serve as a reference point for other transboundary river basins in Africa, Central America, and the Caribbean that are grappling with the same problems confronting Brazil and her co-riparian states.

¹⁵⁴ See López, *supra* note 13, at 4.